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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,171	12/21/2005	Francis Anthony Darmann	40121/01201	1296

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EXAMINER	
WILLOUGHBY, TERRENCE RONIQUE	

ART UNIT	PAPER NUMBER
2836	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,171	DARMANN, FRANCIS ANTHONY	
	Examiner	Art Unit	
	TERRENCE R. WILLOUGHBY	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 12-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 12-19 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 December 2005 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: To claim the benefit of a foreign application, applicant must include a reference to the application in the first sentence(s) of the specification or in an application data sheet.

Appropriate correction is required.

3. The disclosure is further objected to because of the following informalities: On page 13, line 16; page 14, line 2; and page 15, line 10, recites "Fig. 5" which is not the appropriate Figure and needs to be rewritten as "Fig. 6" to be consistent with following disclosure and drawings.

Appropriate correction is required.

Claim Objections

4. Claims 12 and 16 are objected to because of the following informalities: In the following claims, the word "earthing" needs to be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 12, recites "a series of phase coils located adjacent a superconductor coil for fault current limiting phase fault within the network; and a series of neutral coils located adjacent the superconductor coil for fault current limiting neutral earthing faults in the electrical network". However, the claim contains subject matter, which was not consistent with the drawing figures and described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. For example, Fig. 7 discloses a superconductor fault current limiter (76) coupled to a neutral and three-

phase electrical network and a transformer, however the Figure does not disclose "a series of phase coils or a series of neutral coils located adjacent (***emphasis added***) to a superconductor coil" as claimed. Therefore, for the purpose of examination the Examiner will interpret the claim wherein a superconductor coil is coupled to either of the phases or neutral conductor lines of the multi-phase electrical network and transformer.

8. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 19, recites "wherein the superconductive phase fault current limiters and the superconductor neutral fault limiter share the same superconductive coil" is non-functional language. It is understood that the Applicant is referring to a multi-conductor structure, however the claim language suggest connection (i.e. coupling) of the phase and neutral to the same coil of a multi-coil structure in a manner that will represent a short-circuit between the phase and neutral conductors. Therefore, for the purpose of examination the Examiner will interpret the claim wherein the superconductive phase fault current limiters and the superconductor neutral fault current limiter share individual superconductive coils.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Laumond et al. FR (2621749).

12. Regarding claim 16, Laumond et al. in (Figs. 1-2) discloses a method of current limiting earthing faults in an electrical network, comprising the steps of:

utilizing a fault current limiter (15) between the electrical network and ground (abstract).

13. Regarding claim 17, Laumond et al. in (Figs.1-2) discloses a method of current limiting earthing faults in an electrical network, comprising the steps of:

coupling a superconductor phase fault current limiter (152, 153) between each phase (20, 30) of the electrical network and a transformer (T); and

coupling a superconductor neutral fault current limiter (15) between the neutral (0) of the transformer (T) and the neutral of the network (abstract).

14. Regarding claim 19, Laumond et al. in (Figs.1-2) discloses the method as claimed I claim 17, wherein the superconductive phase fault current limiters (200, 300) and the superconductive neutral fault current limiter (0) share individual superconductive coils (152, 153, 15).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Laumond et al. FR (2621749).

17. Regarding claim 12, Laumond et al. in (Figs. 1-2) discloses a fault current limiter for limiting fault currents in an electrical network, comprising:

A series of phase coils (200, 300) located adjacent a superconductor coil (152, 153) for fault current limiting phase faults with the network; and

A neutral coil (i.e. the superconductor (15)) coupled to a neutral conductor line (0) for fault current limiting neutral earthing faults in the electrical network (abstract).

Laumond et al. does not explicitly disclose a series of neutral coils (i.e. superconductor coil (15)).

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a series of neutral coils in the electrical network for added protection during faulty currents, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

18. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laumond et al. FR (2621749) in view of Joo et al. (US 5,930,095).

19. Regarding claim 13, Laumond et al. discloses a fault current limiter as claimed in claim 12, except for the neutral coils being formed around a high permeability core.

Joo et al. in (Fig. 8) discloses a superconducting current limiting device, comprising an interconnected high magnetic permeability structure (88) including a central core (83b) wherein an alternating current coil (83A) is formed around a high permeability core (88).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Joo et al. wherein a coil is formed around a high permeability core with the superconductor fault limiter device of Laumond et al. wherein the neutral coils would be formed around a high permeability core to generate a magnetic flux in the magnetic core thereby improving the efficiency of the circuit.

20. Regarding claim 14, Laumond et al. in view of Joo et al. discloses a fault current limiter as claimed in claim 12, wherein the superconductive coil (Joo et al., Fig. 8, 84) encompasses a central core (Joo et al., Fig. 8, 83B) formed from a high permeability material (Joo et al., Fig. 8, 88).

Regarding claim 15, Laumond et al. in view of Joo et al. discloses a fault current limiter as claimed in claim 14. Laumond et al. does not explicitly disclose that the phase coils and neutral coils as recited in claim 12 magnetically coupled to the central core. However, Joo et al. in (Fig. 8) discloses an alternating current coil (83A) formed around a central core (83b).Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have combine the teachings of Joo et al.

wherein a coil is formed around a high permeability core with the superconductor fault limiter device of Laumond et al. wherein the phase and neutral coils are magnetically coupled to a central core to generate a magnetic flux in the magnetic core thereby improving the efficiency of the circuit.

21. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Laumond et al. FR (2621749) in view of Metra (US 6,049,036).

22. Regarding claim 18, Laumond et al. in (Fig. 1-2) discloses the method as claimed in claim 17, wherein the superconductive phase fault current limiters (152, 153) and the superconductor neutral fault current limiter (15) comprising a cryostat (abstract).

Laumond et al. does not explicit disclose that the superconductive phase and neutral fault current limiters share the same cryostat.

However, Metra in (Fig. 1) discloses a superconductor phase fault current limiter (2) and a superconductive neutral current limiter (4) sharing the same cryostat (6, 7).

It would have been obvious to one of ordinary skill in the art at the time the invention to have modified the superconductor fault current limiter of Laumond et al. and made the superconductive phase and neutral fault current limiters share the same cryostat as taught by Metra for keeping the components at a desired temperature and also to reduce the effects of resistive losses based on the cross-sectional area of the conductors.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERRENCE R. WILLOUGHBY whose telephone number is (571)272-2725. The examiner can normally be reached on 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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